



## frc environmental practice profile

### frc environmental leadership

**frc environmental** has the expertise and experience to deliver insight across the full range of aquatic environments, from freshwater and estuarine to marine ecosystems. Our wide-ranging capabilities in survey, assessment, management, monitoring and reporting enable us to give you absolute clarity and the confidence for action.

If it involves water, it involves **frc environmental**.

### why frc environmental

- We have over 25 years continuous experience operating in Australia and internationally
- We are the consultant of choice to government at the federal, state and local level
- Our scientists have pioneered research techniques that are now the industry standard
- We continue to innovate to provide rigorous, cost-effective outcomes
- The integrity of our research and clarity in reporting gives you confidence and understanding for action

### industry experience

- Ports & Maritime Operations
- Mining, Oil & Gas
- Linear Infrastructure
- Power Generation & Distribution
- Waste Management
- Water Infrastructure
- Effluent Infrastructure
- Urban, Industrial & Agricultural Development
- Government
- International Development & Aid
- Fisheries & Aquaculture
- Wetland Construction & Rehabilitation
- Tourism
- Defence
- Forensic & Legal



we respond



we research



we advise



○ freshwater

○ estuarine

○ marine

## always in the field

frc environmental counts amongst its scientific staff some of the finest consulting aquatic ecologists in Australia.

Our renowned principal ecologists remain deeply connected to field research, leading teams in wide-ranging studies across every aquatic environment imaginable, from the tropical, coastal and marine waters of the Middle East, Asia Pacific and northern Australian regions, to the cool waters of Tasmania, and into freshwater and estuarine environments from across these regions.

## always a standout

Our principal ecologists and senior scientists have several decades of experience at the leading edge of applied research, and have developed techniques which are now considered industry standards. Our hallmark is the combination of rigour with cost-effectiveness.

The credibility and integrity of our staff has led to recognition by the legal systems in a number of states and territories throughout Australia, where we are sought after to act as expert witnesses for Courts and Tribunals at all levels.

## always connected

The integrity of frc environmental's research ensures we have a deep and considered understanding of the science, however we recognise that the finest scientific research needs to connect to wider understanding and action.

Our true and unique ability to add value for our industry partners and clients, and the reason we are the 'go to' aquatic environmental consultants to so many of Australia's leading bodies, lies in our ability to connect the science to understanding. We provide concise, plain English reports to educate clients, partners and the wider community.

The absolute clarity we provide empowers confidence and understanding for action.

The combined breadth and depth of our experience and understanding provides the foundations for practical and effective ecosystems and biodiversity management; and the 'high ground' from which to support confident project planning, reporting and the attainment of permits and licences.

Where you may have encountered issues in the past, our experience, insights and credibility provide the peace of mind that comes with knowing you have at last found true experts.

### performance capabilities

#### Ecosystem and Biodiversity Management

- Baseline studies and monitoring to support effective environmental management
- Monitoring ecosystem health using agency comparable, statistically rigorous methods
- Use of stable isotopes and benthic community structure to map effluent dispersal
- Bioassay modelling of flora and fauna tolerance to contaminants
- Sustainable operation of dams, weirs and hydroelectric plants
- Blue-green algae risk assessment and management
- Wetland rehabilitation and monitoring
- Constructed wetland design to achieve positive, demonstrable ecological outcomes
- Assessment, monitoring and management of mosquitoes and biting midge
- Introduced aquatic pest and weed monitoring and management
- Fish, crustacean and turtle surveys
- Backpack and boat electrofishing
- Artificial reefs and coral translocation
- Oil spill assessment, management and monitoring
- Dredge and spoil deposition – design and implement action of biological, sediment and water quality monitoring to effectively manage environmental impacts
- Stream diversion, habitat restoration and fish passage
- Fisheries and fish habitat management and rehabilitation
- Groundwater fauna

#### Planning and Permitting

- Comprehensive catchment, wetlands and waterways studies
- Coastal zone and riparian management - understanding environmental values
- Site opportunity and constraints analysis using focused survey and critical experience
- Review of Environmental Factors, Environmental Impact Statement and Environmental Impact Assessment studies and reporting - rigour, experience and understanding
- Environmental Management Plans – practical and cost-effective
- Fisheries values assessment and compensatory habitat planning
- EPBC Act self-referral – providing legal certainty
- Riparian buffers to achieve ecological function and maximise development yield
- Climate change and sea level rise – impacts on coastal planning and aquatic biodiversity
- River Operation Plans and Receiving Environment Monitoring Programs
- Environmental toxicology

#### Expert Witness

- 20 years experience in:
  - Planning and Environment Court matters
  - Environmental directions and prosecutions



## ○ Ports & Maritime Operations

- Daru Island Deepwater Port EIS and Baseline Studies (PNG WPSDC)
- Port of Airlie EIS and Monitoring Design (Meridian)
- Southern Bay Islands Marine Transport Study (Redland City Council)

## ○ Mining, Oil & Gas

- Remediation Monitoring and Ecotoxicology Studies, Lady Annie Mines (PB/CopperCo)
- Coral Monitoring Program, Koniambo, New Caledonia (Kellogg Brown & Root Pty Ltd/Xstrata plc)
- Coal Seam Gas Fields, Bowen and Surat Basins (URS Corporation/Santos)

## ○ Linear Infrastructure

- Gateway Bridge and Motorway EIS (Aurecon/Queensland Government)
- Port of Townsville Transport Corridor Upgrade (Queensland Transport)
- Nathan Dam Pipeline (SunWater)

## ○ Power Generation & Distribution

- Kareeya Hydro, Environmental Flows and Ecological Monitoring (Stanwell Corporation Limited)
- Investigation of the Environmental Impact of Cooling Water Blowdown, Tarong Power Station (Austa Electric Ltd)
- Investigation of Fish Kill, Swanbank Power Station (CS Energy)

## ○ Waste Management

- Nudgee Landfill Ecotoxicology (Brisbane City Council)
- Port Alma Slag Processing Facility (Landfix Pty Ltd)
- Alternate Discharge Location Scoping Study, Rocky Point Cogeneration Power Plant (Stanwell Corporation Limited)

## ○ Water Infrastructure

- Agnes Water Desalination Planning Study (PB/Gladstone Regional Council)
- Assessment of Risk from Cyanobacteria (Simmonds & Bristow/Mt Isa Water)
- Connors Dam EIS; Aquatic Ecology (MWH/SunWater)

## ○ Effluent Infrastructure

- Waste Water Treatment Plant Upgrade, Tasmania (Confidential)
- Mornington Island Sewage Outfall Planning Study (Aurecon)
- Bundamba Sewage Treatment Plant Upgrade (PB/MWH/Ipswich Water)

## ○ Urban, Industrial & Agricultural Development

- EIS Proposed Coral Dredging, Green Island Moreton Bay (Queensland Cement Ltd)
- Marine Plant Values Assessment and Determination of Development Constraints at Waterway Down (Thompson Projects)
- EIS Forestry and Pulpmill Project, Kalimantan, Indonesia (Shell Indonesia Ltd)

## ○ Government

- Effects of Acid Sulphate Soils on Aquatic Ecology and Fisheries of Five Estuaries, NSW (Department of Land and Water Conservation)
- Survey of the Marine and Intertidal Habitats of the Great Sandy Region (Queensland Parks and Wildlife Service)
- Fish 'n Creeks Rehabilitation Program, Redlands (Redland City Council)

## ○ International Development & Aid

- Tonga Fisheries Project Design, Tonga (AusAID)
- Fourth Fisheries Development Project, Yemen (European Union/World Bank)
- Assessment of the Environmental Effects of Aquaculture, Sichuan and Guangdong Provinces, China (World Bank)

## ○ Fisheries & Aquaculture

- Effects of Arabian Gulf Oil on Fisheries (Saudi Fishing Company)
- Review of the Ecological Assessment of the Queensland East Coast Otter Trawl Fishery (Fisheries Queensland)
- Ecological Monitoring of Impacts, Hamilton Prawn Farm, Bowen (LGP Holding Pty Ltd)

## ○ Wetland Construction & Rehabilitation

- Houghton Highway Saltmarsh Rehabilitation Trials (Department of Transport and Main Roads)
- Opportunities for Wetland Creation and Rehabilitation, Port Douglas (Ray Group)
- Wetland Evaluation, Assessment, Design and Monitoring, Mango Hill (Urbex Pty Ltd)

## ○ Tourism

- Wistari Reef Environmental Monitoring Program, Great Barrier Reef (P&O Cruises/GBRMPA)
- Russell Island EPBC Act Referral, Russell Island (Moreton Bay Eco Resort)
- Environmental Impacts of Reef Cove Resort Ltd's Operational Development on Brown Creek (Clayton Utz)

## ○ Defence

- Training Impacts, Triangular Island (Department of Defence)
- Halifax Bay Defence Practice Area IAS/EMP, Townsville (Department of Defence)
- Navy User Requirements Options Study, various locations throughout NSW (Department of Defence)

## ○ Forensic & Legal

- La Pampa Grounding, Gladstone (Oltmare Shipping Company/Supreme Court of New South Wales)
- EPA v Karreman Quarries (Connor O'Meara/Magistrates Court of Queensland)
- Cannon Hill Community Links (Clayton Utz/Planning and Environment Court)